--This is a continuation-in-part of application Serial No. 07/218,203, filed July 13, 1988.--

Page 4, line [illegible] change "functioned" --functioning--;

line 17, change "a greatly" to --an excessively--.

Page 7, after line 3, insert:

--A further object of the present invention is to provide a display device comprising an electron-emitting device comprising a laminate having an insulating layer disposed between opposing electrodes on a planar substrate, the insulating layer having an electron-emitting region spaced apart from the electrode, wherein a first portion of the insulating layer is disposed between one of the electrodes and the planar substrate, and the electron emitting region is disposed to the first portion, wherein electrons are emitted from the electron-emitting region by applying a voltage to the electrodes, and wherein a phosphorous emits light by a stimulation of the electrons emitting from the electron-emitting device.

A further object of the present invention is to provide a display device comprising an electron-emitting device in which electron-emitting material comprising the electron-emitting region are in a dispersant stable.

A further object of the present invention is to provide a display device comprising an electron-emitting device in which the electron-emitting material comprising the

electron-emitting region are at least two kinds of fine particles of materials having different conductivities.--;

delete lines 6-8 and rewrite as follows:

--Fig. 1 is a cross-section illustrating an embodiment of a vertical type electron-emitting device of the present invention.

Fig. 2 is a cross-section illustrating another embodiment of a vertical type electron-emitting device of the present invention.

Figs. 3(a) and 3(b) illustrate an example for a method of preparing the electron-emitting device of the present invention.

Fig. 4 is a cross-section illustrating an embodiment of a vertical type electron-emitting device of the present invention.

Fig. 5 is a cross-section illustrating still another embodiment of a vertical type electron-emitting device of the present invention.

Figs. 6a and 6b illustrate examples for a method of preparing an embodiment of an electron-emitting device of the present invention.

Fig. 7 illustrates a further step in a method of preparing an embodiment of an electron-emitting device of the present invention.

Page 7, delete lines 15-17, and rewrite as follows:

--Figs. 11(1) to 11(5) are cross-sections illustrating the preparation steps of an electron-emitting device of the present invention.

Fig. 12 illustrates a preparation step of an electron-emitting device of the present invention.

Figs. 13(a) and 13(b) illustrate preparation steps of another embodiment of an electron-emitting device of the present invention.

Figs. 14(1) to 14(5) are cross-sections illustrating each of the preparation steps of another embodiment of an electron-emitting device of the present invention.

Figs. 15(a) and 15(b) illustrate preparation steps of another embodiment of an electron-emitting device of the present invention.

Figs. 16(a) and 16(b) illustrate preparation steps of another embodiment of an electron-emitting device of the present invention.--;

delete lines 22-26, and rewrite as follows:

--Figs. 17 and 18 diagnostically illustrate electron-emitting device of the present invention having a semiconductor layer comprising fine particles arranged in a disposed state.

Figs. 19(1) to 19(3) are cross-sections illustrating an electron-emitting device of the present invention for each preparation step.

Fig. 20 diagrammatically illustrates an embodiment of an electron-emitting device of the present invention having a semiconductor layer comprising fine particles arranged in a dispersable state.

Figs. 21 and 22 diagrammatically illustrate other embodiments of an electron-emitting device of the present invention.

Figs. 23(1) to 23(4) illustrate the step in the preparation of an embodiment of an electron-emitting device of the present invention.

Figs. 24 and 25 are cross-sections illustrating embodiments of an electron-emitting device of the present invention.

Figs. 26(1) to 26(5) are cross-sections illustrating the preparation steps of an embodiment of an electron-emitting device of the present invention.

Fig. 27 illustrates another embodiment of an electron-emitting device of the present invention.--.

Page 8, delete lines 1-3, and rewrite as follows:

--Figs. 28(a) to 28(c), Figs. 29(a) to 29(c), and Figs. 30(a) to 30(d) illustrate preparation steps in other embodiments of an electron-emitting device of the present invention.

Fig. 31 illustrates another embodiment of an electron-emitting device of the present invention.

Figs. 32(a) and 32(b), Figs. 33(a) to 33(d) and Figs. 34(a) to 34(d) illustrate the preparation steps in other embodiments of an electron-emitting device of the present invention.

Figs. 35 and 36 diagrammatically illustrate an electron-emitting device according to other embodiments of specific structures of the present invention.--;

line 4, change "Fig. 37" to --Figs. 37(a) and 37(b)-- and change "illustrates" to --illustrate--.

Page 8, after line 8, insert the following:

--Fig. 39A is partially cutaway perspective view illustrating the structure of a display panel.

Figure 39B illustrates an example of the display device having electrodes 1 and 2 juxtaposed on a surface of a substrate.

Figure 39C illustrates an example of the display device in which electrodes 1 and 2 are laminated on a substrate.

Figure 39 D illustrates an upper view of the laminate in Fig. 39 A formed of three layers.--

Page 11, line 13, change "microns" to --micron--.

Page 14, line 11, change "electrode" to --electrodes--.

Page 23, line 7, change "meting" to --melting--.

Page 31, line 22, change "Victor" to --Vycor--.

Page 55, after line 4, insert the following:

--The above apparatus making use of the electron-emitting device of the present invention will be described below in detail with reference to the drawings.

With reference to Figs. 39A, 39B, 39C and 39D an embodiment of a flat-plate image display apparatus in which the present invention is applied will be described.

Fig. 39A is a partially cutaway perspective view to show the structure of a display panel.

How to operate the present apparatus will be described below in order.

Fig. 39A shows the structure of the display panel, in which VC denotes a vacuum container made of glass, and FP, part thereof, denotes a face plate on the display surface side. At the inner face of the fact plate FP, a transparent electrode made of, for example, ITO is formed. At the further inner side thereof, red, green and blue fluorescent members (image forming members) are dividedly applied in a mosaic fashion, and provided with a metal back as known in the field of CRT. The transparent electrode, the fluorescent member and the metal back are not shown in the drawing 39A, but are shown in Fig. 39D. In Fig. 39D the face plate. FP, transparent electrode, TE and fluorescent member, FL are shown as three layers laminated in the order shown. The above transparent electrode is electrically connected to the outside of the vacuum container through a terminal EV so that an accelerating voltage can be applied.

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The letter symbol S denotes a glass substrate fixed to the bottom of the above vacuum container VC, on the surface of which the electron-emitting device ED of the present invention is formed in arrangement (Figs. 39B and 39C) with number N x lines ℓ. Herein, Fig. 39B shows an example wherein the devices in which electrodes 1 and 2 are juxtaposed on a surface of a substrate are arranged. Further, Fig. 39C shows an example wherein the devices in which electrodes 1 and 2 are laminated on a substrate are arranged. The group of electron-emitting devices are electrically parallel-connected for each line, and positive-pole side wiring 31 (or negative-pole side wiring 32) of each line is electrically connected to the outside of the vacuum container VC through terminals D_{p1} to $D_{p\ell}$ (of terminals D_{m1} to $D_{m\ell}$).

A grid electrode (modulating electrode) GR is formed in a stripe between the substrate S and the face plate FP. The grid electrode (modulating electrode) GR is provided in the number of N, falling under right angles with the line of the electron-emitting device. Grid holes Gh are provided in each electrode, through which electrons are transmitted. The grid holes Gh may be provided one by one corresponding with each electron-emitting device as shown in Fig. 39A, or the number of minute holes may alternatively be provided in a mesh form.

The respective grid electrodes (modulating electrodes) GR are electrically connected to the outside of

the vacuum container VC through grid electrode terminals G_1 to G_N.

In the present display panel, the lines of the electron-emitting devices in the number of ℓ and the lines of the grid electrodes (modulating electrodes) in the number of N constitute an XY matrix. Synchronizing with the successive driving (scanning) of the lines of electron-emitting devices line by line, modulating signals allotted to one line of an image are simultaneously applied to the lines of grid electrodes (modulating electrodes) in accordance with information signals. Thus, the irradiation with each electron beam to the fluorescent member can be controlled and the image is displayed line by line.

The image display apparatus as described above can be an image display apparatus capable of obtaining a displayed image particularly with a high resolution, free of luminance unevenness and with a high luminance, and having a facility of manufacturing a long life, because of the advantages attributable to the electron-emitting device of the present invention as previously described.--

Page 85, after line 4, insert the following:

--Example 29

Using each of the electron-emitting devices preparing in the above examples, image display apparatuses as shown in Figs. 39A, 39B and 39C were prepared. Herein, a pitch of device wiring electrodes 33, wherein 33-a and 33-b

constitute a pair, is 2mm, a pitch in electron-emitting regions 30 is 2mm. Face plate (FP) was located at 4mm distance from substrate (S). Grid electrodes (GR) were located at 10 μm distance from the surface of the electron-emitting device.

How to operate the present embodiment will be described below.

The voltage on the surface of the fluorescent member is set to be from 0.8 kV to 1.5 kV. In Figs. 39B and 30C, a voltage pulse of 14 V is applied to a pair of device wiring electrodes 33-a and 33-b so that electrons are emitted from the plural electron-emitting devices arranged in linear fashion. The electrons thus emitted are brought under ON/OFF control of electron beams in accordance with information signals by applying a voltage to the group of modulating electrodes. The electrons drawn out by the modulating electrodes impinge against the fluorescent member under acceleration. The fluorescent member performs a line of display in accordance with the information signals. Next, a voltage pulse of 14 V is applied to ^The adjacent device wiring electrode 33-a and 33-b to carry out a line of display as in the above. This operation is successively repeated to form a picture of image. More specifically, having the group of electron-emitting devices serve as scanning electrodes, the scanning electrodes and the modulating electrodes for the XY matrix, and thus the image is displayed.

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The electron-emitting device according to the present embodiment can drive in response to a voltage pulse of 100 picoseconds or less, and hence the displaying of an image in 1/30 second for one picture enables formation of 10,000 lines or more of scanning lines.

The voltage applied to the group of modulating electrodes (GR) is 0 V or less, or 30 V or more, under which the electron beams are OFF-controlled or On-controlled, respectively. The mount of electron beams continuously varies at voltages between 0 V and 30 V. Thus, it is possible to effect gradational display according to the magnitude of the voltage applied to the modulating electrode.--

Page 89, delete in its entirety.

Page 93, renumber as --page 94--.

Page 94, renumber as --page 93--.

IN THE ABSTRACT:

Please rewrite the Abstract as follows:

ABSTRACT--A display device consisting of an electron-emitting device which is a laminate of an insulating layer and a pair of opposing electrodes formed on a planar substrate. A portion of the insulating layer is between the electrodes and a portion containing an electron emitting region in between one electrode and the substrate. Electrons are emitted from the electron emission region by a voltage to